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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,585	12/22/2003	Brandon A. Bartling	SP-1743.1 US	9712

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EXAMINER

CANTELMO, GREGG

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/743,585

Applicant(s)

BARTLING ET AL.

Examiner

Gregg Cantelmo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,6,8-20,22-24,26-29,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-20,22-24,26-29,31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received March 5, 2007:
 - a. Claims 1-3, 5-6, 8-20, 22-24, 26-29 and 31-32 are pending. Claims 4, 7, 21, 25 and 30 have been cancelled as per Applicant's request;
 - b. The drawing objection has been overcome in light of the replacement drawings;
 - c. The previous 112 rejections have been overcome in light of the amendment;
 - d. The prior art rejections stand.

Drawings

2. The drawings were received on March 5, 2007. These drawings are approved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 6-10, 12, 14-17, 19-20, 22-24, 26 and 29-31 are rejected under 35 U.S.C. 103(a) as obvious over Oltman in view of WO '224.

Oltman discloses a metal-air cell (title) comprising: at least one air entry port along an exterior surface of the cell (col. 4, ll. 35-45), and a tab system comprising a biaxially-oriented polypropylene paper (col. 4, ll. 15-20) and an acrylic adhesive disposed between the paper and the exterior surface of the metal air cell (col. 4, ll. 23-27). With respect to the claimed loss stiffness, the polymer layer of Oltman is a biaxially-oriented polypropylene paper applied via an acrylic adhesive. The instant application itself teaches that the polymer layer is also a biaxially oriented polypropylene layer applied via an acrylic adhesive (see Example 1). Since the prior art paper/adhesive combination appears to be substantially identical to at least some of those exemplified in the instant application, there is a reasonable expectation that the prior art paper of Oltman exhibits the same loss stiffness (claims 1, 5, 19, 22-23 and 29)

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peel strength (claims 2 and 21), oxygen permeability (claims 1, 19, 23 and 29), and average burst pressure (claim 19). Oltman makes no mention of the presence of mercury in the product and thus is not expected to have any mercury therein (as applied to claims 1, 19, 23 and 29). The open-circuit voltage (OCV) of Lot-A of Oltman, identified as being the invention of Oltman, is between 1.203 and 1.263 (Table II as applied to claims 29).

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

In the case of the instant application the basis for expectation of inherency is based on the following: the polymer layer of Oltman is a biaxially-oriented polypropylene paper applied via an acrylic adhesive. The instant application itself teaches that the polymer layer is also a biaxially oriented polypropylene layer applied via an acrylic adhesive (see Example 1). Since the prior art paper/adhesive

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combination appears to be substantially identical to at least some of those exemplified in the instant application, there is a reasonable expectation that the prior art paper of Oltman exhibits the same loss stiffness (claims 1, 5, 19, 22, 23 and 29) peel strength (claims 2 and 21), oxygen permeability (claims 1, 19, 23 and 29), and average burst pressure (claim 19).

The Examiner requires applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

The cell is a button-type cell, such shapes being known in the art as a cylindrical button shape (col. 4, ll. 5-7 as applied to claims 9 and 10). Button-type cells include curved side surfaces as readily apparent to one of ordinary skill in the art. Claims 3, 20 and 24 have been interpreted in light of the specification such that the curved surface as claimed is not the surface which includes the air entry ports but rather the sidewall configuration of the cell (see Figs. 1 and 2).

The open-circuit voltage (OCV) of Lot-A of Oltman, identified as being the invention of Oltman, is between 1.203 and 1.263 (Table II as applied to claims 8).

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The first polymer layer, discussed above is a biaxially oriented polypropylene layer (as applied to claim 12).

The first polymer layer has a thickness in the range of 2.7 mils to 3.7 mils, and preferably 3.2 mils. This is equivalent to 0.0027" to 0.0037", and preferably 0.0032" (col. 4, ll. 15-22 as applied to claim 14).

The seal tab is described as being cleanly removed (abstract) and thus would have no visible residue remaining on the cell (as applied to claim 15).

As discussed above, the adhesive is an acrylic adhesive (as applied to claim 16).

The tab system comprises a second polymer layer such as a polyester (col. 4, ll. 30-35 as applied to claim 17) or in the alternative, given that the polypropylene layer is a three-ply paper, includes plural biaxially oriented polypropylene layers (abstract as applied to claim 17).

The issue herein pertains to the limitation regarding the absence of mercury in the cell (claims 1, 19, 23 and 29).

The differences between Oltman and claims 6 and 7 are that Oltman does not teach of the cell comprising an active material that comprises zinc and an electrolyte that comprises KOH (claim 6) or of the cell comprising zero added mercury (claims 1, 19, 23 and 29).

WO '224 is drawn to zinc-air cells which employ a zinc active material and an electrolyte comprising KOH (page 8, ll. 11-24 as applied to claim 6). The cell is also a zero mercury added cell (page 2, ll. 27-29).

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Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Oltman by selecting the zinc active material and KOH electrolyte, since such materials are typical electrochemical elements in metal-air cells and, in particular, zinc air cells. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

It would have additionally been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Oltman by designing the cell to have zero added mercury since mercury is hazardous to the environment and to the health of humans and animals and would have generated a battery which is compliant with the increased demand by the public and federal, state, and local governments to substantially decrease or eliminate mercury in all electrochemical cells, including button-type cells.

Response to Arguments

3. Applicant's arguments filed March 5, 2007 have been fully considered but they are not persuasive.

Applicant argues that the properties of the claims are not inherent properties of the tab system of Oltman.

However the Examiner is not persuaded.

The evidence relied upon to assert Applicant's position is not clear and convincing. First, the Rule 132 declaration fails to provide a side-by-side comparison between the claimed invention and the invention disclosed in the Oltman reference relied upon in the prior art rejection above.

The comparative data in the Rule 132 declaration assumes that the comparative products, taking from the same assignee of the Oltman reference, would be the same as that in Oltman. However there is nothing to support this assertion and applicant's reliance based on the fact that the assignee is the same is fundamentally flawed since the assignee has numerous prior art disclosures related to the same technology and the products tested in the Rule 132 declaration and not clearly shown to be the same products as disclosed in Oltman.

Thus there is insufficient evidence to support Applicant's assertion that the prior art product of Oltman does not inherently exhibit the properties recited in the claims and the prior art rejection stands.

Claim Rejections - 35 USC § 102/103

4. Claims 18, 27-28 and 32 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oltman in view of WO '224.

The teachings of Oltman in view of WO '224 have been discussed above and are incorporated herein.

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The seal tab paper is a three-ply biaxially-oriented polypropylene material and thus is held to include first and second ply biaxially-oriented polypropylene layers (as applied to claims 18, 28 and 32).

With respect to the tensile stress ratio being from 1:3 to 3:1, while Oltman does not teach this ratio, it is held that the biaxially oriented polypropylene layers exhibit inherent machine direction stress and transverse direction stress which, since not disclosed as being comparatively different between the two directions, is expectant to exhibit at least a 1:1 ratio. If not, then in the absence of a teaching of a varied ratio, one of ordinary skill in the art would first consider biaxially orienting the film in each direction with the same amount of stress in both the machine direction and transverse direction.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

In the case of the instant application the basis for expectation of inherency is based on the following: the polymer layer of Oltman is a biaxially-oriented polypropylene paper applied via an acrylic adhesive. The instant application itself teaches that the polymer layer is also a biaxially oriented polypropylene layer applied via an acrylic adhesive (see Example 1). Since the prior art paper/adhesive

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combination appears to be substantially identical to at least some of those exemplified in the instant application, and since there is no explicit teaching of varying the stress between the transverse direction and machine direction there is a reasonable expectation that the prior art paper of Oltman exhibits at least a 1:1 tensile stress property.

The Examiner requires applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Oltman in view of WO '224 further in view of U.S. Patent No. 5,328,778 (Woodruff) or U.S. Patent No. 6,265,102 (Shrim).

The teachings of Oltman in view of WO '224 have been discussed above and are incorporated herein.

The difference between claims 3, 20 and 24 and Oltman is that Oltman does not teach of the cell being a prismatic cell.

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As discussed above, Oltman teaches that while button cells are exemplified, the invention of Oltman (the seal tab) can be used in conjunction with all types of metal-air cells (col. 4, ll. 3-7).

Prismatic metal-air cells are a well known alternative configuration for a metal-air battery as shown by Woodruff (Fig. 1) or Shrim (Fig. 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Oltman to alter the shape to any conventional battery shape for metal air cells, such as the prismatic configuration as shown by Woodruff or Shrim since it would have provided for metal-air cell designs for particular electronic devices.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


gc
March 15, 2007

Gregg Cantelmo
Primary Examiner
Art Unit 1745